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MISCELLANEOUS.

Reflex Irritations.

BY SAMUEL AYRES, M. D., PITTSBURG, PA.

Read before the Allegheny County Medical Society, February 19, 1895.

There are many interesting problems connected with reflex irritations, the correct solution of which would make us Masters of our Art. The ability to recognize, and then to remove, the causes of remote disturbances in the system, would be so desirable to possess that, were one so endowed, his power of healing would be little less than that of the gods.

It seems curious to me, in view of the great importance of this subject, that there is no distinct treatise in the English language, and so far as I know there is none in any other language, containing a philosophical analysis and interpretation of reflex irritations, based especially upon clinical and experimental research. Where, for example, can we find a convincing explanation of the mechanism of production of the vertex pain, or the palmer heat or wrist pain, said to be caused by uterine disease? On all sides the expression *reflex irritation* is used by medical men; perhaps too often in a nebulous sense to conceal ignorance, or to change the subject—perhaps often in a correct manner, but without a real conception of the mechanism involved. Indeed the term has well nigh become an opprobrium to our art.

It would be well at the outset, it seems to me, to have a clear understanding of what is conveyed by the term "reflex irritation." I believe it is agreed to mean an irritation at some point of the body, internal or external, such as an injury, a foreign body, a pressure; or, indeed, a lesion of any character, which produces a disturbance, or pain, or disordered function, at some other part of the body, usually considerably removed from the original point of irritation. The primary irritation is to be regarded as the cause, and the reflex irritation or disturbauce as the effect. Two elements are therefore always present. It will not be forgotten, of course, that reflex acts and influences abound in countless numbers throughout the body; indeed, this is an organic law of our economy. But these physiological reflexes, such as the contraction of the heart from the stimulus of blood; the peristaltic movements of the intestines from the presence of their contents; or the activity of glands from their accustomed excitants, are not referred to in the above definition. If the symptoms of visceral or other internal disorders were localized over, or in, the part primarily affected, there would be little difficulty in the study of reflex phenomena. We would merely have to search beneath the surface for the cause. But, unfortunately, this is not the case. Instead, there is a veritable labyrinth of nervous intercommunication and ramification, the irritation of some part of which may be transmitted to a distant region and exhibited as pain or disordered function.

But notwithstanding the complexity of nerve irritations and manifestations, may not the question be pertinently asked, whether there has not been in the last decade or so too much stress put upon reflex agencies in the production of disease? In other words, are there not many symptoms incorrectly attributed to distant lesions, or reflex sources? and, on the other hand, are there not lesions whose remote effects are

not recognized or correctly interpreted? The first part of the paragraph naturally suggests local or constitutional causes of a disturbance as opposed to reflex causes. To illustrate: A person has pain, or numbness, or some abnormal sensation, in some of the fingers, or a part of the hand. Is the cause of this local, or is it a reflex from the bladder, or uterus, or elsewhere? Or, a poorly nourished girl has inflammary neuralgia; she also has menstrual pain and leucorrhea. Is her neuralgia caused by anaemia or by some uterine irritation? Thus we see that no matter which way we turn, the subject is fraught with interesting phases. But let us be more specific. What class of irritation shall we first consider? Suppose we begin with the ocular.

It would be trite indeed to more than refer to the reflex mischief alleged to be set up by errors of refraction, muscular insufficiency, irritations, or other defects of the eye. Headaches galore, occipital distress, frontal pressure, vertigo, nausea, epilepsy, chorea, insanity, etc. Do these symptoms, and still others claimed, actually result from this source? Will astigmation in the left eye, of one-half dioptre cylinder axis vertical and hypermetropia of two dioptres in the right eye, always produce a certain effect in a school teacher twenty-five years of age in ordinary health? Will they produce the same, or similar effects, in twenty women or twenty men, the conditions being about equal in all? Will they not often occur without noticeable effect? If so, why? The answer may be made that the human system is not a fixed quantity, and that such effects cannot be precisely estimated. True, but are there not enough cases of like character from which to deduce some law? Is there such a law governing these alleged reflex ocular disturbances? Will the ophthalmologists please enlighten us?

A few years ago the startling announcement was made by a New York physician that chorea, epilepsy and insanity are functional nervous diseases caused by refractive errors, the relief of which, by glasses, would cure these disorders. A little later this versatile physician shifted his position, or sufficiently stretched the margin, to include muscular insufficiencies as further causes of these affections — hence tenotomies and prisms would affect cures what cylinders and spheres had failed in. The New York Neurological Society, after a thorough investigation of the above claims, failed to substantiate them; and D. B. St. John Roosa, in a valuable paper entitled "The Relation of Errors of Refraction and Insufficiencies of the Ocular Muscles to Functional Diseases of the Nervous System" (*New York Medical Record*), completely exploded this theory. He states: "From an examination of 6,455 eye cases, defective muscular or refractive states do not necessarily produce even *local* disturbances, such as are comprehended under the term asthenopia, inflammation of the edges of the lids, etc., although high degrees of hypermetropia, and moderate degress of astigmatism, and all cases of mixed astigmatism, *are apt to do so*, sooner or later." But note, he does not say they invariably do. He farther remarks, that asthenopia depends chiefly upon two sets of causes, nervous exhaustion and uncorrected errors of refraction. You observe he places a constitutional or general cause first.

In the *Lancet* of October 28, 1893, H. W. Dodd reports 100 consecutive cases of epilepsy, their refraction and their treatment by glasses, in which he states that of the 100 cases 25 did not require glasses, so they were not prescribed. Of the remaining 75 cases, only 52 secured and wore glasses as ordered. Of these 52, he says, 13 have had no fits since wearing the glasses during periods varying from one year to four months. Three cases remained in *statu quo*, and 36 have improved in a marked degree.

While some of these individual cases show surprising results and seeming cures by the removal of the apparent exciting causes of the attacks, the results are, on the whole, much obscured by the statement that in nearly all cases the usual internal treatment was continued some time after the glasses were ordered. Then again, the period of time of from four months to one year is not long enough to draw conclusions as to cure

in epilepsy. It is a very common thing for cases to escape an attack for several months, or even a year, under large doses of bromide, and then relapse later.

Dodd in his summary uses this language:

"Given a certain condition of instability of the nervous system,

"(*a*) Errors of refraction may excite epilepsy.

"(*b*) The correction of the errors of refraction will, in *combination with other* treatment, in many cases cure or relieve the epileptic condition."

Thus we see how conditional are his statements, and how uncertain are the figures here claimed; and how, in many of these neuroses, apparently cured by the relief of some peripheral defect, an unstable nervous system is the real lesion, without which the various reflex irritants would fall as harmlessly as drops of water upon a solid rock.

What as to the aural reflexes? We do not hear much of them. But can we not have ear strain as well as eye strain? The muscles of the middle ear, the tensor tympani and stapedius are, perhaps, quite as delicate as the ciliary muscles. May they not be disturbed in their action, and produce ear strain? Here is a field, it seems to me, for some enterprising otologist. But we know that there are reflex irritations connected with the ear. For example, every one must have heard or experienced the cough that is often caused by picking in the external auditory meatus, or by the presence of cerumen; and the vertigo and nausea of Meniere's disease are classical.

How shall we approach that prolific field, the nasal and naso-pharyngeal reflexes? It is an interesting one, and a sensitive area, too, as every one knows who has had a pledget of cotton covered with iodine, etc., swept over its mucous surfaces. This never fails to bring the tears, or redden the eyes, or provoke a sneeze—evidence at once of one of the most pronounced reflex upheavals of which the system is capable. What are the remote effects of inflammation of the nasal mucosa, of polypi, hypertrophies, exostoses, rhinoliths, deviated septa, etc.? Since the nasal fossæ are so richly endowed with sensory nerve ends from the first branch of the fifth pair, and from the glosso-pharyngeal and vagus; and since so exposed, they are obviously the source of much local disturbance, whether their reflex irritations are as far-reaching as is claimed is another question.

McBride in his work on "Diseases of the Throat, Nose and Ear," says: "There can be no doubt that at present there is an undue tendency on the part of specialists to seek in the nose the starting point of various evils. Yet, it cannot be denied that even this position is preferable to stolid skepticism." This writer thinks that nasal polypi do sometimes cause asthma, as first pointed out by Voltolini; and that cases of migraine, nervous cough, supra-orbital neuralgia, swelling of the face, vertigo, and epilepsy, are closely associated with conditions of the nose.

Von Stein states that functional affections of the heart, as palpitation and pain, may be caused by nasal irritations. Joel has related cases of œsophageal spasm cured by nasal surgery. Hack describes a case of Basedow's disease relieved by cauterizing the nasal mucous membrane. Nocturnal incontinence of children has been traced to nasal stenosis by Zeim, Major and Block. Bosworth in his treatise on diseases of the nose and throat, p. 193, says he has seen a number of cases of chorea relieved completely and permanently by the cure of nasal disorders. Sollinger and Fincke report cases of epilepsy cured by treating intranasal disease, and Richardson mentions the case of a lady 34 years of age cured of epilepsy by the removal of a post-nasal fibroma. On the other hand, Moldenhauser states that he never met with a supra-orbital neuralgia or simple headache from a nasal reflex, and Sajous says exostoses in the majority of cases give rise to no inconvenience unless they extend across the fossa and compress the turbinated bone. Thus we have diverse views of different writers on this phase of the subject. What conclusions shall we reach? I fear the same elements of error and haste are to be found here, as in the alleged occular reflexes.

A neurosis that has been apparently cured, or temporarily relieved, by treatment of the nose is not necessarily of nasal origin. It may exist coincidently, and not be thus caused. McBride seems to get at the correct solution of many of these so-called nasal reflex neuroses, in his statement that irritation of the nose may change a nervous center from stability to instability. "Is there any valid reason why the reverse should not take place?" He says: "Is it not probable that, given an unstable nerve center, irritation of the nose may render it stable?" Thus he believes that the application of the electric cautery and other agents to the nasal mucosa often act as counter-irritants, and thus relieve in this manner. In other words, an equally good counter-irritant or derivative applied to the nucha, or temples, or elsewhere, would probably give the same results. In this connection I may mention the case of Mr. S. as an illustration of the stress that is laid upon some of these reflex sources, as the fountain of evil to the exclusion of the real cause. Mr. S. was a most afflicted man; mournful and melancholy, nervous, fearful and tearful; with head and body pains enough to satisfy the most enthusiastic specialist, no matter what his field. He had gone the round with the usual results. Sanitoriums, and their baths and waters, had been freely taken internally and eternally. In Chicago he had fallen into the clutches of those orificial fellows who discovered the cause of all his lamentations, and promised quickly to relieve him. His rectum was most effectually bored and ballooned, and his anus trimmed "according to Hoyle." But, not being relieved, he in due time landed in the office of an Allegheny doctor, who found his ills all due to some bones in his nose. These were sawed out, and still he suffered as before. In this extremity he came to see me. It was not a very difficult feat to discover that he was suffering from constitutional syphilis, and that this was probably the cause of many of his symptoms. The response to specific treatment, which he had evidently not received before, was altogether satisfactory, and most of his symptoms disappeared; but not all, for these cases rarely get entirely well, as you are perhaps aware. It was a matter of more surprise that there were enough bones left in his nose to saw out.

Another case which was under my treatment, and would by all precedent be regarded as a cure of epilepsy by the removal of the hypertrophied tissue on the turbinated bone, may be referred to. It was that of Mr. S., 20 years of age, who had been epileptic for six months; a fit every week or two without a very clear cause, though he came of a neurotic stock. While examining him I touched with a probe the inferior turbinated bone, when he immediately had an attack. I recommended the destruction of the hypertrophy, which was done under cocaine, and he has had no spell since, now more than two years; but I was careful to keep him on large doses of bromide for several months. I saw the man the other day, and he says he has sensations in his head of threatened attacks. I do not believe the hypertrophied tissue was the real cause of his fits, and am satisfied if I had touched his eye, or occasioned any sudden pain, the shock would have originated the spasm, just as the sensitive nasal tissue seemed to do.

Turning now briefly to dental reflex irritation, we find numerous *transferred* disturbances from this source. There can be no doubt that, in weak, nervous children, during early dentition, convulsions, vomiting, eczema, diarrhœa, and other troubles, result from this source. Occasionally the irritation from a decayed tooth, or inflamed dental nerve, is transmitted to the ear, producing well-marked earache. Headaches apparently due to dental origin are said to affect chiefly the temples and occiput. How often, though, have we seen whole sets of teeth, and many of them sound, too, sacrificed to a mere suspicion that they were the cause of persistent headaches; when, in truth, the teeth were not in any manner responsible, as is proved by the continuance of the headaches after their removal.

The reflex disturbances of gastric origin are apparently so numerous that time will

not permit more than brief reference to them. The stomach being the center of a nerve plexus, whose branches ramify directly or indirectly to every part of the body, it is not strange that, when disordered, it should originate disturbances at almost any part of the system. Its irradiations are transmitted chiefiy through the two branches of the pneumogastric and the sympathetic nerves. The altered chemistry of digestion causing imperfect assimilation, and the usual train of dyspeptic disorders, does not correctly come within the province of our subject; for the absorption of these products of defective digestion, and their circulation in the blood, directly cause local irritation at any point of the body; such, for example, as joint pains, or headaches, from uric acid. A good illustration of reflex disturbances from this organ is gastric vertigo. The mechanism of this reflex is believed to be the following: The irritation from the stomach when overloaded is transmitted through the sensory fibers of the pneumogastric to the nuclei in the pons, and from there through other of its fibers which pass to the cerebellum. Since its organ chiefly presides over equilibration, a temporary disturbance of its function, possibly circulatory, occasions the dizziness. Reversing the direction of the irritation, we can readily understand the vomiting which often accompanies vertigo from central derangement of the cerebellum. We shall not stop to explain the frequent production of gastric vertigo through the close connection between the nuclei of the vagus and auditory nerves in the pons, and the resultant disturbance of the labyrinth.

The back pains over the eighth or ninth dorsal vertebra from gastric ulcer are also well known reflexes; the explanation being that the irritation from the ulcer passes through the sensory sympathetic nerves, and from their ganglia to the corresponding segment of the cord, from which the irritation is reflected through the posterior root nerve to this particular region.

Were there any doubt as to reflex disturbances arising from disordered conditions of the uterus, ovaries, or their appendages, the nausea and vomiting of pregnancy would be a sufficient argument to silence all skeptics. But there are no doubts on this subject; the only question is as to what remote disorders are directly the result of irritation in these organs. There is perhaps no problem in the realm of symptomatology more difficult to answer. Those who labor in the field of gynecology will, I think, confirm this statement. That ocular, cephalic, respiratory, cardiac, gastric, spinal, splanchnic, and other transferred irritations, are caused by these pelvic lesions, is a sort of tradition which we all implicitly accepted in our early years, and it still contains much truth. But how often are we doomed to disappointment if we rely solely on the restoration of these generative organs for the cure of the distant irritation.

It is not many years since these viscera were regarded as the *fons et origo* of all evils in woman; but I think the Schneiderian membrane and the ciliary and recti muscles are sharing this responsibility in the last five or ten years. The error of such conclusions is exemplified in the following case: This was a girl of about 22, a former patient of mine, affected with recurrent mania, from whom a well-known gynecologist removed the ovaries with the expectation of curing the mental malady; and both himself and the family actually thought he had restored her, for the operation had quite a derivative effect, and she appeared all at once to get well. But of course she relapsed, as these cases always do, and she is still as miserable as she was before the oophorectomy. The mental disease had not been understood. Owing to the far-reaching influence of sexual derangements in women, and since pelvic surgery is so comparatively safe in competent hands, it has, I believe, largely become the practice to cure the diseases of these parts, if possible, by way of exclusion, and await results. But it is also true that constitutional conditions, as depraved states of the blood, exhaustion, etc., quickly disorder these organs, and that a course of rest and upbuilding (except there be palpable local disease) may not be time lost.

It was my desire to include a brief consideration of those very interesting reflex phenomena connected with vesical, prostatic, rectal, and urethral diseases; but as I fear to tax your patience I must forego this part. I will, however, state in connection with this subject, that the numerous reflex neuroses supposed to emanate from phimosis and adherent prepuce, can now, at least, be counted in one day; and that we hear much less of the necessity of circumcission, except for hygienic and moral purposes.

I must here distinctly disavow the least inclination to discourage or to interpose any obstacle to the legitimate search for the actual causes of reflex symptoms; but I must insist that one's zeal should not run away with his judgment; and I am opposed to that medical enterprise which would make all the crooked ways straight, and the rough places smooth, in the vague searches for the causes of lesions. But I am free to confess there are extenuating circumstances even in the practice. Were medicine an exact science, and the interpretation of these same reflexes systematized, our investigation would be more exact, and we should know better where to look for the causes of the disease. But since it is not, and since our efforts in one direction after another fail to relieve our patient's distress, we, in our despair, seize upon this, or upon that, as the possible origin, and, like the drowning man, grasp at a mere straw; and so is our most ancient and honorable profession brought low. Unfortunately, my brethren, the fault is too often with ourselves. We do not, or cannot, look deeply enough, and search out the hidden mysteries of disease.

Another interesting question might be touched upon here: If certain disordered conditions present are not believed to be the essential cause of the discomfort or impaired health, to what extent may they act as contributory causes? For example, a case of anæmia has hypermetropia; or a case of uterine disease has also a rectal fissure; will the eye-strain in the former tend to use up some extra nerve force, or cerebral energy, so that the nutrition and blood-making organs are retarded in the performance of their functions? It may be so; the question is difficult to answer. Perhaps this is the reason for the general patchwork and repair advised by some specialists. It would seem the wiser course, though, to first correct that lesion which seemed to be the chief cause; and if, after sufficient time and general treatment, the trouble had not disappeared, then remedy other defects.

We must here enter our protest against the premature reports of alleged cures after the removal of the supposed reflex cause. I am sure this is a very prevalent error. Owing to the enthusiasm of many operators, the conclusion is at once reached, after an operation, that the cure is permanent; and forthwith it goes on record. In many of those cases immediately relieved, the physical effect of the operation, *per se*, or its derivative effect on the circulation, or innervation, is, I believe, no small factor; and from six months to two years should intervene before pronouncing a case positively cured. The temptation to rush into print is dazzling to some, and one reason for the unreliability of statistics.

In our endeavor to reach correct conclusions as to the part certain defects or irritations in organs or tissues may play in this drama of disease, we should bear these leading facts in mind: That constitutional conditions, as gout, syphilis, rheumatism, or other toxic blood states, deep-seated local disease, cerebral and nerve exhaustion, and especially inherited or acquired instability of the nervous system, are of the first importance; and the influence of environment; of meteorological conditions; of various psychical factors, as suggestion, expectations, etc., is not to be underestimated.

Perhaps it may be said that there are three classes of cases with reference to reflex irritations: (1) Those persons of normally robust organizations, on whom ordinary irritations play in vain—their equilibrium cannot be disturbed by anything short of a decided cause; (2) those persons of unstable nervous systems, who are susceptible to reflex disturbances, but from careful avoidance, and other fortunate circumstances, largely escape their effect; (3)

those neuropathic, sensitive constitutions, so delicately balanced that a single depressing or irritating agent will throw them into an abnormal or pathological state—our neurasthenics and hysterics, for example.

There are many phases of the subject that could have been considered with profit had time permitted. For instance, I have not referred to the mechanism of the reflex arc which enables us to explain many of the more manifest transferred phenomena of irritation. It seems probable that in the production of those complex and uuaccountable reflexes the sympathetic nerves must form the chief media of communication.

In conclusion, Mr. President, I must apoligize for treating so imperfectly a matter of such considerable importance. After getting deeper into it I found that nothing short of a profound treatise, the need of which I intimated above, and which I am not competent to prepare, could adequately present the details of this broad subject.

The Use of Local Applications of Guaiacol in Diseases of the Throat.

Hal. Foster, A.B., M.D., in Kansas City Medical Record.

The preparations of guaiacol have been used for some time in pulmonary diseases, especially phthisis. There can be no question that this drug acts on the germs, reduces the temperature and proves a source of satisfaction to the phpsician by giving marked results. The carbonate made by Merk has been nsed more extensively internally given in capsules or in milk. During the last year many laryngologists have used the solution of guaiacol topically to acute tonsillitis. I have applied the solution of pure guaiacol (Merk's) by means of cotton on the ordinary throat applicators. As a rule the drug causes a burning sensation for a few moments after being applied to the tonsils. I have also used it in ulcers of the larynx, caused by tuberculosis. In each case it has acted well, and has enabled my patients to swallow food without pain. In these cases of tuberculosis of the larynx, Merk's carbonate of guaiacol in capsules or milk has been used internally as well. In using the pure solution to the throat great care should always be exercised in order that none of the fluid should get into the larynx. If the applicator armed with cotton is thoroughly saturated and gently touched against the mouth of the bottle before making the application to the throat there will be no danger of getting any of the drug into the larynx. It can be used in oil of almond as a spray in any strength the physician may elect. In my hands the direct application to the throat has been much more satisfactory in every way. I have also used it with some satisfaction in acute pharyngitis. If it is used early, many cases of acute tonsillitis may be aborted—that is, before pus has formed in the tonsils.

Notice.

To the Editor.

Having had a number of inquiries regarding the railway fare to the meeting of the State Society, I wrote Mr. Black for further particulars. His reply is found below.

G. A. WALL, M.D.

TOPEKA, KAS., April 8, 1895.

Dr. G. A. Wall, Topeka, Kas.—DEAR SIR: Answering your favor of the 6th inst. inquiring if any specified number should be in attendance at the Kansas Medical Society annual meeting, to be held at Topeka, May 16 and 17, in order that reduced rates may be granted: Beg to advise that a fare and one-third on the certificate plan, which is the rate authorized for the above meeting, requires that 100 be in attendance by rail.

Yours truly.

W. J. BLACK, A. G. P. A.

THE following pharmaceutical and instrument houses will be represented at the meeting of the State Society: Reed & Carnrick, New York; Horlick's Food Co., Racine; John Wyeth & Bro., Philadelphia; Parke, Davis & Co., J. N. Scott, Physicians' Supply Co., Kansas City; Swift & Holliday, Kaw Pharmacal Co., The Union Publishing Co., Topeka; Frederick Stearns & Co., Detroit.

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Topeka, Kansas, Saturday, April 27, 1895.

The State Society.

The twenty-ninth annual meeting of our State Society will soon be held. Every inducement in the way of program and entertainment will be offered to bring to this city the largest attendance the Society has ever known. There are many reasons why this meeting should be largely attended and there are just as many reasons why every physician who is interested in the welfare of the medical profession in Kansas should feel an interest in the Society and especially in this meeting.

There is being agitated now among medical societies a question which is of vital importance to the profession at large. While the Kansas Medical Society has already by a suggestion expressed its wishes in regard to the present code of ethics, there should be a definite and decisive action which will define our position upon the question. That position should be declared without regard to the action of other organizations. If it is to the best interests of the Kansas profession to maintain our allegiance to this time honored relic of the past, let us do so and draw the line of qualification in close adherence to its requirements. On the other hand, if we are to recognize ability, independent research, honest methods, and successful work without regard to class distinction; if we are going to meet our competitors in a fair contest of scientific learning, let us declare our non-allegiance to the present code of ethics. This question is likely to be discussed and the action of the American Medical Association will doubtless have no influence in determining the action here.

The question of finance must be given some careful consideration. The Secretary deserves great credit for the report of the last proceedings, and we believe it was highly appreciated by the members. It was a credit to the Society and it gives to each member a valuable record and a volume of good medical literature. However, in order that this plan may be followed the resources of the Society must be increased. The present annual dues of one dollar is not sufficient to meet the requirements and it seems no objection should be raised to paying at least two dollars with the additional advantage gained in the published reports.

A resolution was introduced at the last meeting to the effect that the meeting place should be permanently located at Topeka. The reasons given for such action were that Topeka was more centrally located and more easy of access. This resolution will come up for action at the next meeting and those opposed should be on hand. This question should not be decided in the interest of local physicians, but rather for the greater accommodation of those who are located in various sections of the State. While the meetings are always heartily welcomed at Topeka, the physicians here are not averse to spending a few days at some other good

town when it is for the best interests of the Society. We hope that every member is interested in these matters, and being interested we hope he will be present and bring his neighbor along.

Third International Congress of Dermatology.

To be held in London, August 4 to 5, inclusive, 1896.

President—Mr. Jonathan Hutchinson.

Vice Presidents, United States—Dr. Duhring, of Philadelphia; Dr. White, of Boston; Dr. Nevins Hyde, of Chicago; Dr. Bulkley, Dr. Keyes and Dr. Fox, of New York.

Treasurer—Mr. Malcolm Morris.

Executive Council—Mr. Hutchinson, chairman; Dr. Colcott Fox, vice chairman.

Committees — Reception, Dr. Radcliffe Crocker, chairman; Museum and Demonstration, Dr. Stephen Mackenzie, chairman; Bacteriological, Dr. Sims Woodhead, chairman.

Secretary to Section for Syphilis—Mr. Ernest Lane.

Secretary General—Dr. J. J. Pringle, 23 Lower Seymour street. London, W.

REGULATIONS.

1. All duly qualified medical men, British or foreign, or others interested in Science, invited by the Council, who shall have paid the fee of one pound sterling, and who shall have enrolled themselves, shall be members of the Congress and entitled to the Volume of Transactions.

2. The official languages of the Congress shall be English, French and German, but with the permission of the President, members may express themselves in the language with which they are most familiar.

3. The proceedings of the Congress shall be embodied in a Volume of Transactions, edited by the Executive Council.

4. Communications relative to membership, papers, or other matters connected with the Congress, should be addressed to the Secretary General, Dr. J. J. Pringle, 23 Lower Seymour street, London, W., or to one of the foreign Secretaries.

5. The fee for membership shall be payable in London, at or before the opening of the Congress. (It will greatly facilitate the work of the Executive if the fee is forwarded as soon as possible after the 1st of May, 1896.)

6. Members who are unable to attend the Congress shall receive the Volume of Transactions.

7 The subjects treated of shall be of two orders: (1) Those selected beforehand by the Executive Council and introduced by gentlemen chosen for that purpose by the Council; (2) those selected by individual members themselves.

8. Subjects selected for debate by the Council shall take precedence over those selected by the members.

8. The sittings of the Congress shall take place from 16 to 1 in the forenoon, and from 3 to 5 in the afternoon, of each day.

10. There shall be clinical demonstrations of patients every morning from 9 to 10:30, and every afternoon from 2 to 3.

11. Members contributing papers must submit an abstract of them to the Secretary General on or before the 1st of May, 1886, which will be printed either in full or in part, and embodied in the general program of the Congress which will be distributed at the opening.

12. At every debate precedence will be given to gentlemen who have communicated beforehand their intention to take part in it.

13. No papers lasting more than twenty minutes will be permitted. Speeches will be strictly limited to ten minutes each. MMS. of the papers read must be left with the Secretary General before the end of the sitting. The Executive Council shall decide as to the entire or partial publication of such papers in the transactions of the Congress.

J. J. PRINGLE, Secretary General.

THE spo.es of bacteria are immortal in the absence of destructive measures.

Pancreatic Diabetes.

Medical Record.

The subject of the pathogeny of diabetes was brought prominently before the recent meeting of the French Congress of Medicine at Lyons, and was discussed by Lancereaux, Lepine, Glenard, Comby, Teissier, Charrin, Renault and others. We shall here take up but one aspect of the question and state the principal facts on which the existence of pancreatic diabetes is affirmed; these facts are now numerous and are constantly increasing. (*The Boston Medical and Surgical Journal.*) In 1877 Lancereaux reported to the Academy of Medicine, with the morbid specimens, two interesting cases of "grave diabetes," dependent (as he believed) on destructive lesions of the pancreas. In 1879 appeared the inaugural thesis of Lapierre on diabetes, caused by alterations of the pancreas. The disease, as he describes it, begins suddenly, and manifests itself by intense thirst and hunger, then by abundant polyuria with sugar oscillating between three hundred and six hundred grammes per day, and rapid emaciation, with loss of all the forces and finally complications (broncho-pneumonia, diabetic coma, phthisis) that carry the patient off. The same writer published a subsequent memoir founded on twenty well-observed cases; in fourteen of these there was atrophy of the pancreas more or less advanced. In some the disease was due to calculous obstruction of the duct, in others to chronic disease followed by atrophy of the organ, and in still others by sclerosis. These observations received powerful confirmation by the experimental results of Mehring and Minkowski, who extirpated the pancreas in dogs. They found that diabetes begins a short time after extirpation and persists till the death of the animal. "In addition to the glycosuria there are polyuria, great thirst, hunger and rapid emaciation." In one dog, which fasted forty-eight hours the urine contained from five to six per cent. of sugar, while another dog, weighing sixteen pounds, fed on an exclusive meat diet, eliminated daily almost one litre of urine with six to eight per cent. of sugar. The urine also contained acetone. No glycogen was found in any of the organs after death, even in animals that had been dead four weeks or more. It was said there was no injury to the solar plexus by the operation, so that the diabetes could not be referred to nervous influence. These investigators noticed that whenever there was left any fragment of the pancreatic tissue in the abdomen, glycosuria did not develop. The total ablation of the pancreas produces a permanent diabetes, and this comes on immediately and attains its maximum in two or three days. Dominicis, an Italian physiologist, made subsequently a similar series of experiments, though without absolutely identical results; in a few of his animals (one-third of the cases) the diabetes failed to appear after total extirpation of the pancreas, and where the disease did appear it was not till twenty or thirty hours after the operation. Redmond, of Metz, in 1889 and 1890, published some experiments made with Marinisco and Chaput, as the result of which they conclude that total destruction of the pancreas generally produces permanent diabetes, and that even partial ablation of this organ is sometimes followed by the same effect. Hedon excised the pancreas in twenty-two dogs, and in each case diabetic urine was passed the day after and persisted until death, with all the characteristic symptoms of saccharine diabetes. When injections of paraffine were made into the pancreatic duct, destroying the digestive function of the gland, diabetes did not supervene. Thiroloix succeeded by a novel method in completely destroying the pancreas, and yet in keeping his dogs alive a long time. By injecting asphaltum into the pancreatic duct, he caused sclerosis of the organ, which became shrunken to a hard, firm cord, deprived of all gland-cells, yet under these conditions glycosuria did not appear. In other cases he removed a portion of the pancreas, after which he obtained symptoms of intense glycosuria. In another series he removed the whole of the pancreas and obtained a lasting diabetes. On autopsy lesions of the solar plexus were noted. His

conclusion is that ablation of the pancreas acts reflexly, by its influence on the nervous system. In other words, "pancreatic diabetes may be regarded as a particular form of nervous diabetes." This does not differ from the old theory of Klebs, which regards diabetes as an expression of lesions of the solar plexus. This is the view of the pathogeny of "lean" (grave) diabetes held by Mathieu in the *Traite de Medicine*. Lepine, who was co-referee at the recent Lyons Congress, has recorded forty cases of the removal of the pancreas in dogs. After complete removal he has always noted the appearance of sugar in the urine within eight hours, and the diabetes is permanent. He believes that the blood has the power of constantly destroying glucose by the action of a ferment made in the pancreas (glycolytic ferment); this ferment is diminished in diseases of the pancreas and wanting when that gland is destroyed. Lepine adduces experiments which he thinks sustain this view. It is interesting in this connection to note that Thiroloix, in considering the results of pancreatic grafting, an ingenious device practiced by Minkowski, Hedon, and himself (whereby the pancreas in dogs is brought out of the abdominal cavity and grafted into the muscles of the external walls), has modified his former theory, and has adopted Lepine's conclusion, "that the pancreas produces the principal glycolytic ferment which destroys glucose in the blood" and thus prevents it reaching the urine. DeRenzi and Reale, in their numerous experiments, have caused diabetes in .75 per cent. of the animals on which they produced entire extirpation of the pancreas. They also claim to have caused glycosuria by extirpating the salivary glands (parotid and submaxillary). Minkowski, in reviewing their work, says that diabetes never fails to appear after complete removal of the pancreas if the animals live long enough after the operation. This statement is founded on fifty-five experiments made on dogs. Three times only did the sugar fail to appear in the urine; but the dogs succumbed during the first twenty-four hours. As to glycosuria after incomplete extirpation, he admits its existence, though in general it is slight; in one case, however, there was serious diabetes, though the fragment of pancreas left was fairly large. He regards glycosuria following extirpation of the salivary glands as only temporary. Lepine, in his communication to the recent Congress, October 29, 1894, defines his glycolytic theory. The "ferment" is taken up by the leucocytes and carried by them to the tissues where it aids glycolysis. His experiments on artificial circulation have demonstrated the influence of a ferment in the blood on the consumption of sugar. An animal (a healthy dog) is bled to death; into one of the hind legs blood is transfused that is poor in glycolytic ferment (being taken from the vessels of a dog whose pancreas has been extirpated). Into the other leg blood rich in glycolytic ferment is transfused, being taken from a healthy animal. It is invariably found that the consumption of sugar is greater in the limb into which is transfused blood containing a normal amount of glycolytic ferment.

On Scarlatina-Like Rashes in Children.

Henry Ashby, M.D., F.R.C.P., in the Medical Chronicle.

There is a strong family likeness between the various zymotic diseases. Various kinds of staphylococci seem to have a suitable soil prepared for their development in the body through the influence of the specific organisms of the infectious diseases, and the presence of the staphylococci may account for the similarity of some of the symptoms common to all. Varicelli mimics smallpox, roetheln mimics measles. Some epidemics of influenza simulate diphtheria, being accompanied by a membranous sore throat. The similarity in symptoms between various zimotic diseases is apt to give rise to much perplexity in diagnosis, and in no case more so than when a rash of the scarlatina type is present. The rash of scarlet fever is diffuse and punctiform, covering trunk, back, and limbs; its mildest form remains visible twenty-four to forty-

eight hours. A red rash, seen by candle-light and gone by daylight, is not scarlatina. Though a scarlatinal rash may appear to be erythematous, the red points corresponding to the hair follicles are of a deeper color than the surrounding skin. Though diffuse on the trunk, it may be patchy on the limbs. Full diagnosis is often very difficult. Scarlet fever may be practically feverless, and the temperature not more than 99.5° or 100° for a couple of evenings; the fauces may be only doubtfully reddened. A well-marked red rash may appear in course of other diseases, as pneumonia, or after an operation, or during suppuration of some sort. The association of a red rash with certain epidemics of influenza has been noted by many others besides the author, but every case in which there is a red, punctiform, diffuse rash should be isolated and treated as scarlatina, unless it can be proved otherwise.

The scarlatinal form of rubella (epidemic roseola) most closely resembles mild scarlatina, just as, at other times, it resembles measles. Whether these two forms of rubella are distinct diseases or types of the same is still an open question. The author does not think that the scarlatiniform type can always be distinguished from scarlet fever, as Clement Dukes believes. The great difficulty is in isolated cases. Where an epidemic exists the long incubation of rubella—eighteen to twenty-one days—distinguishes it from the short incubation period of scarlet fever, namely, two to three days. So-called surgical scarlatina is usually true scarlatina in a surgical sense; but where there is an excessive amount of suppuration there may be a red rash due to septicemia. Such a rash may occur in empyema cases, and sometimes in diphtheria. There may at times be a second rash in scarlet-fever cases, where there is much suppuration about the fauces and neck, but all these are a duskier red than the true scarlatina rash. The only drug eruption which is likely to be mistaken for scarlet fever is the erythematous eruption that sometimes follows the administration of belladona or its alkaloid. The rash of antipyrine is more of the measles or nettle rash type. An erythematous rash may occur in mild or severe ptomainic poisoning, accompanied by gastro-intestinal disturbance and vomiting and diarrhœa, but in the child this combination should always suggest scarlet fever in an early stage. Ashby does not lay much stress upon desquamation as a symptom of recent scarlet fever, unless there be other evidence from the history or sequelæ, such as nephritis. "Peeling" may follow other diseases, as typhoid-pneumonia or influenza, specially that of the thick skin upon the hands and feet. In fine, a diagnosis in any case can only be arrived at by collecting all the evidence available, and not by giving one piece of evidence a fictititious importance.

Digestive Disturbances in Diabetics, and Their Treatment.

Dr. K. Grube in Medical Week.

Dr. Grube (Neuenahr) has on several occasions observed in patients suffering from diabetes a syndrome, closely resembling the gastric paroxysms of tabes, which sets in unexpectedly, without premonitory symptoms, usually in the morning. The patient suddenly experiences sharp pain in the abdomen, especially at the pit of the stomach, usually accompanied by tympanites and eructations. There are also violent contractions of the stomach, perceptible on inspection of the region. In a short time nausea, acid vomiting, and sometimes diarrhea and cramp in the calves supervene. The tongue is coated, the pulse accelerated, and the mucous membrane of the mouth dry; there is slight fever. The urine, in addition to sugar, may contain acetone, but there is no reaction of diacetic or hydroxybutyric acid. Lastly, the breath of the patient smells like chloroform. These symptoms, which Dr. Grube attributes to irritation of the pneumogastric nerve by toxic substances circulating in the blood, last during a period of time varying from a few hours to one or two days, and leave more or less prolonged debility.

Experience has shown that the best treatment of these gastric crises of diabetic patients consists in immediately bringing about an alvine evacuation by means of enemata of water or oil, and applying hot poultices to the abdomen. Internal administration of medicaments is impossible, as these are immediately rejected by the stomach; and the same is true of food taken during a paroxism. The liquids which agree best with the patient immediately after the attack has ceased, are milk, chicken broth, and tea or water, mixed with brandy.

Gastric crises of diabetic patients, though not by themselves dangerous, are nevertheless of bad augury, inasmuch as they indicate that the affection is entering upon its final stage.

In order to prevent their recurrence, the severity of the anti-diabetic diet must be somewhat relaxed so as to allow of reducing the amount of meat consumed, while at the same time the regularity of the stools must be attended to.

In addition to the acute digestive disturbances, which Dr. Grube describes under the name of gastric crises, diabetic patients more frequently, at certain stages of the affection, present a condition of chronic dyspepsia, characterized by diminished appetite, more particularly aversion for meat, disturbed digestion, and constipation. The best means, according to Dr. G., of treating this dyspepsia consists in the administration of alcoholic extract of pancreas, prepared in the following manner: Chop the pancreas of an ox into small pieces, add half a liter (1 pint) of alcohol of a specific of 0.966, and leave the mixture for two days in a cold place, preferably in iced water; then filter two or three times, and add some good brandy to disguise the taste. The patient takes a wineglassful of this liquid after each meal.

Dr. Grube first administered extract of pancreas to diabetic patients in the hope of reducing by this means the amount of sugar in the urine. The effect of this remedy on the glycosuria, however, was found to be nil, while its favorable influence on the digestive disturbances and on the constipation was always found to be very marked.

Regarding Heart Tonics.

The Times and Register.

Professor Von Ziemssen objects to the tinctures of digitalis and strophanthus on account of their unreliability, and says that both of them should be struck out of the Pharmacopea. He uses digitalis only in infusion or powder; and strophanthus, in the form of strophanthine, in the dose of 1-64 grain twice a day. This is not cumulative in its action, and, although not so lasting in its effect as digitalis, is the most preferable substitute (*Munch. med. Woch.*, No. 50 1894). The tincture of strophanthus is conveniently prescribed in one of the compressed forms, and is not only reliable, but free from the nauseating effect the tincture sometimes has.

Strychnine is the best remedy to restore the heart's action during the compensating period of valvular insufficiency. When existing compensation is disturbed, it is also a valuable adjunct of digitalis.

Opium in Epilepsy.

Wood, in the *Univer. Med. Magazine*, furnishes the following extract of a notable report:

Collins (*Medical Record*, Sept. 22, 1894) has employed the treatment suggested by Professor Flechsig, of Leipsic, in about fifty cases of epilepsy. Briefly, the plan is as follows: The patient is first given one-half to one grain of opium, and this is rapidly increased until at the end of the first week he is taking fifteen grains or more a day, in doses of from one to four grains. At the end of six weeks the opium is entirely suspended, and potassium or sodium bromide (one-half drachm four times daily) is substituted. After these large doses of bromide have been continued for some time, the amount is generally lowered, until the patient is taking less than forty grains a day. It is important that the bromide should immediately follow the suspension of the large doses of opium. The writer concludes:

1. The plan suggested by Flechsig is not a specific in the treatment of epilepsy.

2. In almost every case in which this plan of treatment has been tried there has been a cessation of the fits for a greater or less time.

3. A relapse generally occurs in a period varying from a few weeks to a few months.

4. The frequency of fits after the exhibition of opium is, for the first year at least, lessened more than one-half.

5. The attacks occurring after the relapse are much less severe in character than those that the patient had been accustomed to having.

6. This plan of treatment is particularly valuable in ancient and intractable cases.

7. In recent cases of idiopathic epilepsy it cannot be recommended.

8. the opium plan of treatment is an important adjuvant to the bromide plan as ordinarily applied.

9. The opium acts symptomatically, and merely prepares the way for and enhances the activity of the bromides and other therapeutic measures.

10. This plan of treatment permits the use of any other substances which are known to have a beneficial action in epilepsy.

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THE diagnosis of injury to the viscera in abdominal contusions is very difficult, and the patient should always be given the benefit of the doubt by an operation in this class of cases where the constitutional disturbances con inue or increase.

DR. ANDREWS, the genial representative of Reed & Carnrick, is in the city. It is hard to say whether the greater credit for the phenomenal success of peptenzyme in this section is due more to the fine address and pleasing proclivities of Dr. Andrews or to the merits of the drug itself. It is positively certain you can't like one without liking the other.

A YOUNG MOTHER.—Dr. Tackett, in the *Medical Monthly*, reports a colored girl aged 11 years and 4 months who gave birth to a healthy child. Mother and child well and growing at the time reported, some months after the accouchment.

IN cases of hypermetropia, myopia and presbyopia, where glasses have to be worn, the subject does not have to use them in microscopic work. Even in astigmatism the acuity of vision is but little interfered with in microscopic work.

THE abdomen should be opened when there is an injury to it producing shock and it continues for several hours, especially if the pulse weakens.

IN the treatment of goitre, nutrition of the nerve centers is the main thing to look after.

OVER-FEEDING children is a prime factor in the high mortality of infants and children.

DO NOT be premature in giving a favorable prognosis in injuries of the abdomen.

THE beginning of modern sanitation dates back about sixty years.